



Project Proposal for Ph.D.

Project Details	
Project Title	Dorsolateral prefrontal cortex and inhibitory control: Effect of sleep loss Rodent risk and reward decision making
Project Summary (Minimum 500 and maximum 2000 characters)	Dorsolateral préfrontal.cortex is a subregion that is important for inhibitory/executive control in rodents and in humans. Translational studies aimed at understanding disorders related to neurological/psychiatric disorders related to sleep and dementias rely on animal models of dorsolateral prefrontal cortex. However the extent of differentiation of this sub region, and the nature of its connectivity with the medial temporal regions, specifically hippocampus and amygdala differs between rodents and humans. Therefore, the project aims to test effects of sleep loss on hippocampus and amygdala subregions in rodents performing a cognitive tasks (rodent gambling task, spatial memory tasks) that implicates ventromedial and dorsolateral prefrontal cortex (two important subregions of the prefrontal correct) and subcortical regions of the medial temporal lobe.

Ph.D. Supervisors			
Role	Name of Faculty	Academic Unit in IITD/Institute/University	Email ID (Official)
Supervisor 1	Varsha Singh	HUSS	vsingh@hss.iitd.ac.in
Supervisor 2	Sushil Jha	School of Life Sciences, JNU	Sushil_1000@yahoo.com

Project requirements (Student qualifications, experience required, etc) *The candidate will be shortlisted based on common shortlisting criteria decided by ScRC (SIRe)
Masters in Neuroscience, Masters in Biology/Life Sciences with lab experience in neurobiology and strong interest in cognitive/affective/decision neuroscience. Research experience (master’s dissertation, internships/projects in interdisciplinary area that demonstrates an ability to carry out statistical analysis and research writing is a plus)

Source of fellowship/funding (CSIR/UGC/DBT/ICMR/ICAR/NEET-PG/DST-INSPIRE/IRD/FITT Project details, if any)
Candidate with his/her own fellowship /institute assistantship

Role of Faculty Members involved:	
Supervisor-1	Overseeing the coursework, planning of experiments, selection of rodent tasks on the basis of theories related to brain, behavior and cognition, overseeing the analysis and interpretation of results, supervising written reports/manuscripts.
Supervisor-2	Overseeing animal lab, selection of sleep loss procedures, neurobiological techniques (handling animals, lesioning, staining) to study neural changes in specific regions and pathways of the rodent brain areas).